

REPLACED BY  
ART 34 AMDT

What is claimed is:

1. A brush assembly for an electric motor having an end cap assembly and a commutator, comprising:
  - 5 a base having a member for securing said base to the motor end cap assembly;
  - a brush housing associated with said base and having first and second open ends;
  - a brush, defining an axis, slidably supported within said housing
  - 10 between said first and second open ends, said brush extending from one of said first and second open ends, said brush including a surface having a spring retention plunge, said spring retention plunge defining an arcuate face angled relative to said axis on an angle greater than 0° and up to 15°;
  - a biasing member having a contact end exerting a force directly on said
  - 15 arcuate face for biasing said brush within said housing for contact with the commutator, said contact end defining a line which extends across said arcuate face such that said contact end abuts said arcuate face along said line for prohibiting excessive movement of the contact end along an axis transverse to said brush axis; and
  - 20 an electrical connector electrically coupled with said brush for electrical connection between the commutator and a power supply.
2. The brush assembly of Claim 1, wherein said brush further includes a wall formed in said surface for retaining contact of said biasing
- 25 member with said spring retention plunge.
3. The brush assembly of Claim 1, wherein a slope of said spring retention plunge enables transverse retention of said spring.
- 30 4. A brush for an electric motor, comprising:
  - a body having a desired configuration for fitting within a housing, said body defining an axis; and

a spring retention plunge formed in a surface of said body, said plunge defining an arcuate face angled relative to a plane transverse to said axis, said surface at a terminal end of said body, wherein a slope of said arcuate face is greater than zero degrees and up to 15°, said arcuate face having a curvature sized to receive a spring such that the spring contacts the arcuate face along a line to prohibit excess movement of the spring on the arcuate surface for enabling spring force exerted thereon to be substantially constant as said body wears.

10           5.       The brush of Claim 4, wherein said plunge further forms a wall in said surface for retaining contact of a biasing member with said spring retention plunge.

15           6.       The brush of Claim 4, wherein said slope of said spring retention plunge enables transverse retention of a biasing member.

20           7.       A method of manufacturing a brush for an electric motor, comprising the steps of:  
              providing a brush blank defining an axis therethrough and having a top surface; and  
              forming an arcuate spring retention plunge in said top surface having a slope relative to said axis.

25           8.       The method of Claim 7, wherein said step of forming an arcuate retention plunge includes the step of plunging one of a grinding disc and cutting wheel into said top surface.

30           9.       The method of Claim 8, further comprising the step of angling said one of a grinding disc and cutting wheel at an angle relative to said axis.

10           10.      The method of Claim 7, further comprising the step of providing

a diameter of said arcuate spring retention plunge, perpendicular to said axis, enabling lateral retention of a biasing member.

11. The method of Claim 7, further comprising the step of providing  
5 a degree of said slope of said spring retention plunge sufficient to enable transverse retention of a biasing member.